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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/284,222    07/22/99    TSUJIMOTO

H    P990708

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IM52/0306

EXAMINER
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WEINER, L ART UNIT	PAPER NUMBER
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1745  
DATE MAILED:

03/06/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trad marks**

## Office Action Summary

Application No.

09/284,222

Applicant(s)

TSUJIMOTO ET AL.

Examiner

Laura S Weiner

Art Unit

1745

-- Th MAILING DATE of this communication appears on the cover sheet with the corresponding address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. Applicant's submission of the Information Disclosure Statement filed November 14, 2000 cited a "X" reference and, therefore, the finality of that action is withdrawn.

### ***Response to Amendment***

2. Examiner acknowledges the addition of claims 13-16 cited in Amendment F filed 10-10-00. Examiner acknowledges the cancellation of claims 1-6 and addition of claims 7-12 cited in PreAmendment A dated 9-22-99. Claims 7-16 have been examined on their merits.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

4. Claims 8 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is rejected because "polyvinylidene fluoride" should be "polyvinylidene fluoride".

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In amending claim 16, " $\text{Li}_x\text{MO}_2$ " should instead be " $\text{Li}_x\text{MO}_2$ ".

✓  
***Claim Rejections - 35 USC § 102***

5. Claims 7-9, 16 are rejected under 35 U.S.C. 102(a) as being anticipated by Koichiro (JP 9-213337, abstract).

Koichiro teaches a battery having stable performance by increasing an initial capacity, reducing capacity decrease and decreasing chipping and cracking in an electrode surface fixing an active material. Koichiro teaches a polyvinylidene fluoride system polymer (polyvinylidene fluoride) and a rubber polymer (polymer obtained as a latex particle by copolymerizing styrene, butadiene, methylmethacrylic acid, acrylonitrile and itaconic acid) fused or dispersed in a polarity organic solvent, a battery binder composition is formed, active material ( $\text{LiCoO}_2$ , positive active material and carbon for the negative active material) is compounded therein.

***Claim Rejections - 35 USC § 103***

6. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koichiro (JP 9-213337, abstract).

Koichiro teaches the claimed invention except does not specifically teach that the binder comprises a weight mixture ratio of fluorine polymer to the aromatic vinyl conjugate diene polymer from 1-99 and does not teach that the binder is 2-15 wt% of the total weight of the negative electrode.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the binder comprises a weight mixture ratio of fluorine polymer to the aromatic vinyl conjugate diene polymer from 1-99 and that the binder is 2-15 wt% of the total weight of the negative electrode, since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

7. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koichiro (JP 9-213337, abstract) in view of Abe et al. (JP 4-195201, abstract).

Koichiro teaches the claimed battery system except does not teach that the binder further includes a cellulose derivative and does not specifically teach that the carbon material is graphite.

Abe et al. teaches a nonaqueous battery negative electrode mix which is high in viscosity. Abe et al. teaches that it is known to mix water and carboxymethyl cellulose CMC together, then add polyvinylidene fluoride, then add  $\text{SiSnO}_3$ , acetylene black and graphite to obtain the negative electrode mix. Abe et al. teaches that aggregates such as binder aggregate and carbon aggregate in the negative electrode mix can be reduced without the viscosity of the negative electrode mix being lowered.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include carboxymethyl cellulose in the negative mixture when polyvinylidene fluoride is present because Abe et al. teaches that these compounds are known to be used together in a

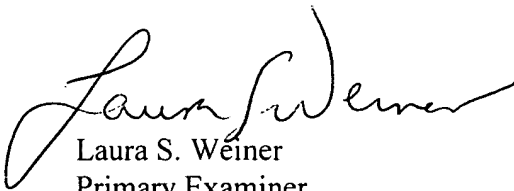
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negative electrode and one would expect using graphite in place of carbon because one of ordinary skill in art would know that graphite is used as the carbon material in a negative electrode.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Weiner whose telephone number is (703) 308-4396. The examiner can normally be reached on Monday-Friday from 7:30 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gabrielle Brouillette, can be reached at (703) 308-0756. The official fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Laura S. Weiner  
Primary Examiner  
Art Unit 1745  
March 2, 2001